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10/583,147	08/02/2007	Takefumi Yoshida	358362011200	5089

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EXAMINER	
SALVITTI, MICHAEL A	
ART UNIT	PAPER NUMBER
1767	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,147	YOSHIDA ET AL.	
	Examiner	Art Unit	
	MICHAEL A. SALVITTI	1767	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5,8,11,13 and 15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,8,11,13 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3-5, 8, 11, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,591,814 to *Muroi et al.* view of SU 852914 to *Karkozov et al.* For translational purposes, the English language translation of *Karkozov* is referenced below.

Regarding claim 1: *Muroi* teaches a curable composition comprising a continuous phase bifunctional epoxy resin (col. 6 lines 20-25) in liquid form (col. 10 lines 1-10) and a dispersoid/solid particle phase (col. 10 lines 60-65) of a latent curing agent compound (abstract).

Muroi is silent regarding the compound having two or more amino groups in a molecule as an aromatic amine compound having a benzoxazole structure. However, *Karkozov* teaches an epoxy composition comprising a benzoxazole structure (page. 3). *Muroi* and *Karkozov* are analogous art because they are both concerned with the same field of endeavor, namely epoxy resin adhesives with solid latent curing agents. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the benzoxazole compound of *Karkozov* with the composition of *Muroi* and would have been motivated to do so since *Karkozov* states that the use of the

benzoxazole as a curing agent raises the pot life and the heat resistance of the epoxy composition (pages 2 and 3).

Regarding claim 3: *Muroi* teaches the epoxy is liquid (col. 10 lines 1-5).

Regarding claims 4 and 8: *Muroi* teaches the solvent MIBK (examples) which has a boiling point below 120 °C. While it is not disclosed to use it in the epoxy composition, at the time of the invention a person having ordinary skill in the art would have found it obvious to add organic solvent to the composition of *Muroi* and would have been motivated to do so with the motivation of decreasing viscosity, since viscosity control is an important concern of *Muroi* (col. 10 lines 10-15).

Regarding claims 5, 11, 13 and 15: *Muroi* teaches a particle size of 0.1 micron (abstract).

Response to Arguments

The following responses are directed to the document entitled "Remarks" pages 1-4) received August 18th, 2010.

Applicant's arguments concerning the rejection of claims 1, 3-5, 8, 11, 13 and 15 under 35 U.S.C. § 103(a) to to *Muroi* (USPN 5,591,814*)* in view of *Karkozov* (SU 852914) have been fully considered but they are not persuasive.

A) Applicant argues (pages 1-page 2 first paragraph) that in *Muroi*, that the difference between *Muroi* and the instant invention lies in the curing agent; *Muroi* uses an amine/epoxy adduct, whereas the instant invention relies on a polyamino benzoxazole compound.

In response, the Examiner is in general agreement with applicant's characterization of *Muroi* and the instant invention. However, the Examiner disagrees with the statement (page 2, end of first paragraph), "accordingly the obtained adduct particles would not contain amino hydrogens as in the claimed curing agent". The present claim language does not limit the amines, and it is the examiner's position that the applicant is reading unrecited specification details into the claims (elements such as the amines being primary amines or terminal amines as exemplified in chemical formulas I-XIII). Claim 1 requires the compound to have two or more amino groups, which *Muroi* clearly shows describes (e.g. piperazine, imidazoles, etc.; col. 6, lines 25-34). Furthermore, the dispersoid comprises (b), which does not exclude the presence of additional components such as the epoxy adducts of *Muroi*.

The rejection set forth can be summarized as follows: *Muroi*, as in the instant claimed invention is drawn to a curable epoxy resin containing dispersed initiator, which initiates the curing of the epoxy resin via anionic initiation (*Muroi* col. 4, lines 40-48) at elevated temperatures (*Muroi* 1:54-2:4 and Examples). The difference between *Muroi* and the instant invention is that in the instant invention the latent initiator comprises an aromatic amine compound having a benzoxazole structure, whereas the latent initiators of *Muroi* comprise aromatic rings having two or more amino groups, but devoid of a benzoxazole structure. *Karkozov* (pages 2-3) teaches benzoxazole initiators as latent initiators for epoxy resins that improve pot life, raise the heat resistance of hardened materials and are beneficial in their non-volatility. Since *Muroi* is directly concerned with storage-stable (*Muroi* col. 4, lines 45-48) compounds with nonvolatile aromatic amine

curing agents (*Muroi* col. 2, lines 35-37), at the time of the invention, it would have been obvious to a person having ordinary skill in the art to add or substitute the benzoxazole of *Karkozov* into the curable compositon of *Muroi* as a means of improving the pot-life, while avoiding the handling and curability drawbacks of volatile amines.

B) With respect to applicant's argument (page 2, middle paragraph), concerning *Muroi* including polyfunctional isocyantes, applicant's argument has not been found to be persuasive for two reasons: **1)** the present claim language is open-ended by virtue of the term comprising (MPEP § 2111.03); therefore the present claim language allows for additional components to be present. **2)** *Muroi* describes the use of polyisocyanate as an optional component and secondary embodiment of the invention ("…can be prepared by treating the adduct particles with a polyfunctional isocyanate compound"; *Muroi* col. 10, lines 25-40), and indeed working examples are present with polyisocyanate excluded (e.g. Example 3).

C) Applicant's argument (page 2-first paragraph of page 3) is not understood with respect to applicant's argument that *Muroi* forms a film around the particles. The examiner's interpretation of the art in view of the current claims is summarized in the rejection and in point "A" above. Further clarification from Applicant including identification (line/column numbers) of the alleged film-coated particles in *Muroi* is requested, since the only discussion of particle films in *Muroi* is relegated to *Muroi*'s discussion of the prior art (*Muroi* col. 11, lines 1-25). Until further clarificaiton is provided, this argument will not be addressed herein.

D) Applicant's argument that *Karkozov* teaches away from the *Muroi* in that *Muroi* allegedly has only one active amino hydrogen and the curing agents of *Karkozov* contain two active hydrogens has been considered but has not been found persuasive.

Karkozov draws direct comparison between two diamine compounds, in their respective uses as curing agents: APBO, a compound that reads on the instant benzoxazole, and MPDA, an aromatic diamine. Both APBO and MPDA, are primary diamines; therefore the variable being tested in *Karkozov* is the structure of the ring system between the amine groups. *Karkozov* shows APBO as having higher softening temperature, hardness (*Karkozov* Table, page 5) and further notes that APBO is superior to MPDA in terms of showing less volatility and longer pot life (*Karkozov* pages 2-3). With the degree of the diamines being held constant, a person having ordinary skill in the art recognizes that the superiority of APBO over MPDA can be attributed to the variable of the benzoxazole ring. Therefore, a person having ordinary skill in the art would consider benzoxazole ring systems as potential aromatic amine curing agents in addition to the aromatic amine curing agents taught by *Muroi* in col. 6, lines 25-34, since *Karkozov* teaches that amine curing agents derived from this structure show improved pot-life, while avoiding the handling and curability drawbacks of volatile amines (*Karkozov* pages 2-3 and Table, page 5).

E) Applicant's argument concerning the solubility of *Muroi*'s initiator particles during the process of making is not persuasive for two reasons: **1)** the instant claimed invention is not concerned with the process of making the latent initiator particles; and **2)** the initiator particles of *Muroi,* once prepared, form a dispersion of particles in the

epoxy resin, until the latent curing agent is activated (above the melting point of the particles; *Muroi* 4:64-5:3); likewise, the ground APBO particles of *Karkozov* are insoluble in epoxy resin until heated (*Karkozov* page 3).

Art Made of Record

The art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO 892 form.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A. SALVITTI whose telephone number is (571)270-7341. The examiner can normally be reached on Monday-Thursday 8AM-7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. A. S./
Examiner, Art Unit 1767

/Mark Eashoo/

Supervisory Patent Examiner, Art Unit 1767